FAULT CURRENT CALCULATION FORM

Permit Number:_____ **Project Name:**_____

Date:_____ **Contractor Name:**_____

The following fault current calculation form must be completed and submitted prior to service approval. See instructions and impedance table on reverse side. Continue these steps until each panel has been addressed or the fault current is below the minimum equipment rating.

A. UTILITY TRANSFORMER **Value** **Total Impedance** **Fault Current**

1. Rated Capacity _____KVA
2. Secondary Voltage _____V _____∅
3. Nameplate % Impedance _____%

   Or
4. Transformer Short Circuit Amps _____Amps
5. Ohmic Impedance (**V** (see **V** defined in step 1 page 2) divided by the short circuit amps)

   _____Ohms (step #1)

B. SERVICE CONDUCTORS

1. Conductor Size _____ Type_____(CU or AL)
2. Length _____Ft
3. Type of Conduit (metal or PVC) _____
4. Impedance per 1000' _____Ohms per 1000'
5. Number of Parallel Runs _____
6. Conductor Impedance (Imp. per 1000' x length divided by # of parallel runs x 1000)

   _____Ohms (step #2)
7. Total Impedance to Source (**A**5 + **B**6) _____Ohms
8. Fault Current to Load Terminals (**V** (see **V** defined in step 1 page 2) divided by **B**7) _____Amps

   (step #3)

C. SERVICE ENTRANCE EQUIPMENT

1. Equipment Rating _____Amps
2. Interrupting Rating _____A.I.C.

D. FEEDER CONDUCTOR

1. Conductor Size _____ Type _____(CU or AL)
2. Length _____Ft
3. Type of Conduit _____
4. Impedance per 1000' _____Ohms per 1000'
5. Number of Parallel Runs _____
6. Conductor Impedance (Imp. Per 1000' x length divided by # of parallel runs x 1000)

   _____Ohms
7. Total Impedance to Source (**B**7 + **D**6) _____Ohms
8. Fault Current at Load Terminals (**V** (see **V** defined in step 1 page 2) divided by **D**7)

   _____Amps

   (step #3)

E. FEEDER PANEL

1. Equipment Rating _____Amps
2. Interrupting Rating _____A.I.C.

TRANSFORMER REPLACEMENTS: Replacements that result in a higher possible fault current, than that of the existing equipment, SHALL be addressed to this department, prior to reconnection of existing service equipment.

----------FAULT CURRENT CALCULATION INSTRUCTIONS----------

(STEP #1)

Secondary Transformer (I.C. Rating) at its rated voltage, calculate Z-ohms as follows:

Transformer Z-ohms = $\frac{V}{\text{Short Circuit Current}}$ ("V" as defined below)

		V
120/240V	1∅ 3-wire	120
208Y/120V	3∅ 4-wire	120
240 Delta	3∅ 4-wire	140
480Y/277V	3∅ 4-wire	277
480 Delta	3∅ 3-wire	277

(STEP #2) (Using Cable Impedance Data Table Below)

Conductor Impedance = $\frac{\text{(impedance per 1000') X length}}{\text{1000 X number of parallel runs}}$

(STEP #3)

Service I.C. = $\frac{\text{"V"}}{\text{Total Z}}$ (total Z = transformer Z + cable Z)

(STEP #4)

Subpanel I.C. = $\frac{\text{"V"}}{\text{Total Z}}$ (total Z = transformer Z + cable Z)

Note:
Continue these steps until each panel has been addressed or the fault current is below the minimum equipment rating.

CABLE IMPEDANCE DATA (ohms per 1000 feet)

Conductors	**Copper**		**Aluminum**	
AWG or KCMIL	**Magnetic Duct**	**Non-Magnetic Duct**	**Magnetic Duct**	**Non-Magnetic Duct**
#2	**0.20**	**0.19**	**0.32**	**0.32**
#1	**0.16**	**0.15**	**0.25**	**0.25**
#1/0	**0.12**	**0.12**	**0.20**	**0.20**
#2/0	**0.10**	**0.10**	**0.16**	**0.16**
#3/0	**0.079**	**0.077**	**0.13**	**0.13**
#4/0	**0.063**	**0.062**	**0.10**	**0.10**
250KCM	**0.054**	**0.052**	**0.086**	**0.085**
300KCM	**0.045**	**0.044**	**0.072**	**0.071**
350KCM	**0.039**	**0.038**	**0.063**	**0.061**
400KCM	**0.035**	**0.033**	**0.055**	**0.054**
500KCM	**0.029**	**0.027**	**0.045**	**0.043**
600KCM	**0.025**	**0.023**	**0.038**	**0.036**
750KCM	**0.021**	**0.019**	**0.031**	**0.029**

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